

of the contents of a single bobbin or 137 yards. A glance from left to right on the same horizontal line shows the comparative value of each combination in the several experiments. One or two small irregularities in Table II. in the six-cell results, are doubtless due to the poles of the magnet not having been ground true.

With respect to durability, the graphite plates in use since 1850 are in as good condition as the new ones now in course of manufacture. Silver plates employed by us under like circumstances, commenced perishing after twelve months or more of use; they crumble away in great measure, they cut apart at the surface level, and they get eaten into holes throughout.

II. "On the Aquiferous and Oviductal Systems in the Lamellibranchiate Mollusks." By GEORGE ROLLESTON, M.D., Lee's Reader in Anatomy, and CHARLES ROBERTSON, Esq., Curator of the Museum, Christ Church, Oxford. Communicated by Dr. ACLAND. Received January 6, 1859.

(Abstract.)

In this paper the authors bring forward two views as to the anatomy of the Lamellibranchiata.

1. The first part of the communication is devoted to an examination of the commonly-received opinion as to the outlet of the ovarian system, and arguments are brought forward to show that the orifices usually supposed to discharge this office are in reality the exhalant orifices of a water-vascular system. The positive arguments drawn from the way in which fine injections thrown in by these orifices distribute themselves throughout the visceral mass, and from the relative position of orifices acknowledged to belong to a water-vascular system in other mollusks, are confirmed by a consideration of the improbability attaching to the old view, which regarded as oviducts in mollusca two canals, which lying one on either side of the body, yet communicate freely with each other at no great distance from their termination, and which lie far away from the lower segment of the intestinal tube. The inhalant aquiferous orifices are considered to be indicated by a belt of parasitic animals impacted in the foot tissue, as represented in one of the figures.

2. In the second part of the communication, the structures are indicated which the authors hold to be the true oviducts. One large band which is seen at the spawning season as a prominent ridge projecting into the calibre of the lower segment of the intestinal tube, and two smaller ones, which are traceable from the commencement of the intestine down to a point where its upper coils are in close proximity to that part of its lower segment where the former band ends in a club-shaped dilatation, are shown to discharge this function. The method of dissection to be adopted for the demonstration of these structures is given at some length, and the following arguments are adduced in support of the view which regards them as oviducts. A fine injection thrown into the largest of the bands in question is seen to pass into the ovary, and is recognizable under the microscope as contained within the limitary membrane of its ultimate follicles. Its distribution, therefore, as detectable at once by the naked eye and by the microscope, contrasts strongly with that of a similar injection thrown in by either of the aquiferous orifices. *Secondly*: The condition of distention, prominence, and intumescence of this band, coincides with similar conditions in the ovary; and from an acquaintance with the condition of the branchial marsupium's contents we are enabled always to predict what will be found to be that of this band. *Thirdly*: At periods when ova are being rapidly secreted by the ovary, ova are to be found at all points within the whole length of these three bands. The double oviduct at the oral and the single at the anal extremity of the Lamellibranchiata, is what our knowledge of their development would lead us to anticipate; and the close connexion of the principal oviduct with that latter outlet, and with the lower segment of the intestinal tube, brings the anatomy of these bivalve mollusks into exact correspondence with that of higher tribes in the same series.

What is said of the ovarian secretion and outlets, applies, *mutatis mutandis*, to the testicular.

The paper is illustrated by drawings taken from dissections of the common fresh-water muscle, *Anodonta Cygnea*.